

WO 00/78818

PCT/FR00/01692

22

CLAIMS

1. Process for producing an aqueous cationic dispersion of polymers with a hydrophobic nature based on the emulsion polymerization at a temperature ranging from 30 to 100°C of at least one emulsion-polymerizable monomer in the presence of 20 to 60% by weight, with respect to the monomer(s), of an imidized styrene/maleic anhydride copolymer acting as sole surfactant, the solids content of the dispersion being from 20 to 50%.

2. Process according to Claim 1, characterized in that the styrene and the maleic anhydride are taken in a ratio of 1/1 to 6/1 and preferably of 2/1 to 4/1.

3. Process according to Claim 1 or 2, characterized in that the said copolymer has a number-average molecular mass of between 500 and 20,000 and preferably between 2000 and 5000.

4. Process according to one of the preceding claims, characterized in that the degree of imidization of the said copolymer is between 50 and 100%.

5. Process according to one of the preceding claims, characterized in that the said copolymer is imidized by dimethylpropylenediamine.

6. Process according to any one of the preceding claims, characterized in that the monomer is chosen from the groups comprising:

- hydrophobic monomers, such as methyl  
5 acrylate, ethyl acrylate, butyl acrylate, 2-ethylhexyl acrylate, methyl methacrylate and more generally alkyl (meth)acrylates of formula:

$\text{CH}_2=\text{C}(\text{R}_1)\text{COOR}_2$ , with  $\text{R}_1=\text{H}$  or  $\text{CH}_3$  and  $\text{R}_2$  a group comprising 1 to 22 C,

- 10 perfluoroalkyl (meth)acrylates of formula:

$\text{CH}_2=\text{C}(\text{R}_1)\text{COO}-(\text{CH}_2)_n-\text{C}_{n'}\text{F}_{2n'+1}$ , with  $\text{R}_1=\text{H}$  or  $\text{CH}_3$ ,  
 $n=1-4$  and  $n'=1-14$ ,

vinyl acetate, styrene or versatic esters,

- relatively hydrophilic monomers, such as  
15 acrylic acid, methacrylic acid, acrylamide or ethylene glycol (meth)acrylate.

7. Cationic dispersion of polymers with a hydrophobic nature as can be had by the process of Claims 1 to 6, characterized in that the polymer  
20 particles have a size of between 50 and 500 nm and preferably of less than 300 nm.

8. Dispersion according to Claim 7, characterized in that the polymer with a hydrophobic nature has a glass transition temperature of between  
25  $-70^\circ\text{C}$  and  $100^\circ\text{C}$  and preferably between 0 and  $50^\circ\text{C}$ .

9. Use of the dispersion according to Claim 7 or 8 as internal sizing agent in the treatment of papers and boards.

10. Use of the dispersion according to Claim 5 7 or 8 in combination with other sizing agents, such as starch, in the surface sizing of papers and boards.

11. Composition for the external sizing of papers and boards comprising the dispersion according to either of Claims 7 and 8 and starch taken in a ratio 10 by mass ranging from 5 to 50%.